

Typification of Dr. Tomitaro Makino's Botanical Names (5)

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As part of a series of studies on the typification of botanical names published by Tomitaro Makino, proposals for the lectotypification, neotypification and the verification of other type materials for taxa in the family *Ranunculaceae* are presented here.

(Continued from J. Jpn. Bot. 82: 238–241, 2007)

Key words: Lectotypification, neotypification, nomenclature, *Ranunculaceae*, Tomitaro Makino.

The authors have been verifying the scientific names that Tomitaro Makino gave to numerous Japanese plants and thus far several families have been treated (Tanaka 2005a, 2005b, Tanaka and Sugawara 2006, 2007). This paper is presented as the fifth in the series proposing the lectotypification, neotypification or otherwise providing verification of the status of potential type material, for 17 taxa, *Adonis amurensis* var. *uniflorus*, *Anemone flaccida* var. *semiplena*, *A. narcissiflora* var. *shikokiana*, *Aquilegia buergeriana* f. *flavescens*, *A. flabellata* var. *humiliata*, *Caltha palustris* var. *pygmaea*, *Clematis japonica* var. *brevipedicelata*, *C. ×takedana*, *C. tosaensis*, *Coptis quinquefolia* f. *ramosa*, *C. quinquefolia* var. *stolonifera*, *C. quinquefolia* var. *trifoliolata*, *Isopyrum numajirianum*, *Pulsatilla cernua* var. *plena*, *Ranunculus kadzusensis*, *R. kawakamii*, *Trollius pulcher* in the family *Ranunculaceae*. Herbarium acronyms are from Holmgren et al. (1990) or from the on-line Index Herbariorum at <http://sciweb.nybg.org/science2/IndexHerbariorum.asp> (10 April 2009).

RANUNCULACEAE

Adonis amurensis Regel & Radde var. [α] **uniflorus** Makino in Bot. Mag. (Tokyo) 15: 97 (1907).

Lectotype (designated here): Prov. Tosa (Kochi Pref.): Sakawa cult., 1885, T. Makino s.n. (MAK 94670).

Syntype: Prov. Ishikari (Hokkaido): Sapporo, 26 May 1887, Y. Tokubuchi s.n. (MAK 34500); Prov. Musashi (Saitama Pref.): Cult. in Shimonaguri, Chichibu, 6 April 1895, T. Makino s.n. (MAK 94662); Prov. Bungo (Ōita Pref.): Kanbara, Minami-tateishi-mura, 20 April 1889, N. Okada s.n. (MAK 94672).

Syntype (not found): Prov. Ishikari (Hokkaido): Sapporo, unknown date & collector, herb. Sc. Coll., Imp. Univ. Tokyo; Prov. Musashi (Tokyo): Cult. in Bot. Gard. Sc. Coll. Imp. Univ., unknown date & collector, herb. Sci. Coll. Imp. Univ. Tokyo.

Japanese name: Fukuju-sô.

Makino (1907) cited a number of specimens in his original publication, however, he did not designate the holotype. Therefore these cited specimens are syntypes. Of these the Hokkaido specimen collected by Tokubuchi and Musashi specimen collected by Makino which are supposed to be housed in TI were not found. This is currently accepted as *A. ramosa* Franch. (Nishikawa and Kadota 2006).

Anemone flaccida Makino var. **semiplena**
Makino in Bot. Mag. (Tokyo) **28**: 185 (1914).

Type: Prov. Musashi (Tokyo): cultivated, April 1914, T. Makino s.n. (MAK 94717 – holotype).

Japanese name: Ginsakadzuki-ichige (Makino 1914).

Makino cited a single specimen in his original protologue, which was found in MAK. This sheet is bearing Makino's handwriting "At the beginning of April, 1914 in Komaba Agricultural University." He also noted the Japanese name "Ginsakadzuki-ichige" in the label on the sheet. It is considered that he apparently based his description of *Anemone flaccida* Makino var. *semiplena* Makino on this material. Therefore this specimen can be recognized automatically as equivalent to the holotype.

Tamura identified this specimen as *A. flaccida* F. Schmidt in 1963. As identified by M. Tamura, this taxon is currently accepted as *A. flaccida*.

Anemone narcissiflora L. var. **shikokiana**
Makino in Bot. Mag. (Tokyo) **16**: 58 (1902).

Lectotype (designated here): Prov. Iyo (Ehime Pref.): Mt. Ishidzuchi, Aug. 1892, K. Okudaira s.n. (MAK 369657 – lectotype, isolectotype). [Fig. 1]

Syntype (not found): Prov. Iyo (Ehime Pref.): Mt. Ishidzuchi, Aug. 1891, I. Doi s.n.

Japanese name: Shikoku-ichige.

One of the syntypes cited in his original protologue (Makino 1902) was found from the un-mounted specimens in MAK, and newly

mounted (Fig. 1). This specimen is consisting of two sheets. He cited one more specimen collected from the same place in 1891 by I. Doi, however, it has not thus far been found. The Okudaira's specimen is chosen as a lectotype here. He treated later this variety as a distinct species (Makino 1913), and is currently accepted as *A. shikokiana* (Makino) Makino.

Aquilegia buergeriana Siebold & Zucc.
f. **flavescens** Makino in Bot. Mag. (Tokyo) **24**: 141 (1910).

Neotype (designated here): Tokyo cult., 9 June 1910, T. Makino 303 (MAK 95380).

[Fig. 2]

Japanese name: Kibanano-yama-odamaki.

Makino (1910) did not designate the type specimen in his original protologue. There is only a single specimen in MAK bearing a label made by Makino when he worked in the Ikenaga Botanical Institute, Kobe (Fig. 2). This specimen is chosen as a neotype here.

Aquilegia flabellata Siebold & Zucc. var. **humiliata** Makino in Bot. Mag. (Tokyo) **24**: 140 (1910).

Type: Iinuma, Somoku-Dzusetsu, 10, fol. 31 recto, no. 29 (holotype).

Japanese name: Hôkazô.

Makino (1910) simply cited an illustration of the Iinuma's Somoku-Dzusetsu. According to the International Code of the Botanical Nomenclature 9.1 (McNeill et al. 2006), this illustration is automatically considered to be the holotype. This taxon is currently accepted as *A. flabellata* Siebold & Zucc. var. *pumila* (Huth) Kudo.

Caltha palstris L. var. **pygmaea** Makino in Bot. Mag. (Tokyo) **16**: 146 (1902).

Lectotype (designated here): Tokyo cult., April 1902, T. Makino s.n. (MAK 89211).

Syntype: Tokyo cult., July 1902, T. Makino s.n. (MAK 89216).

Japanese name: Kobano-ryûkinka.

Makino (1902) cited two specimens in his



Fig. 1. Lectotype of *Anemone narcissiflora* L. var. *shikokiana* Makino (K. Okudaira s.n., MAK 369657).

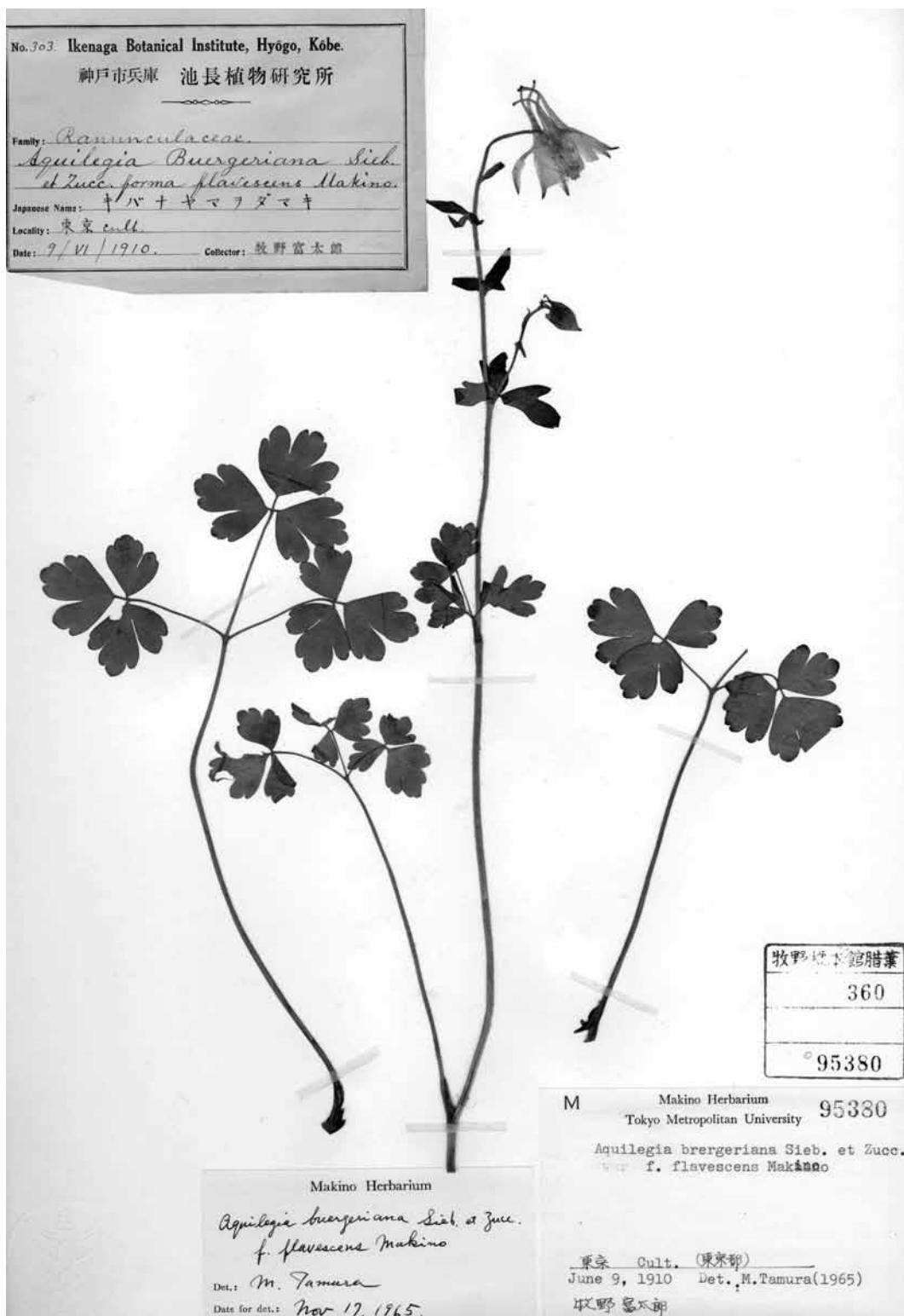


Fig. 2. Neotype of *Aquilegia buergeriana* Siebold & Zucc. f. *flavescentes* Makino (T. Makino 303, MAK 95380).

original protologue, and these are recognized as syntypes. Both specimens are cultivated sources and one of them is sterile. Another specimen is bearing Makino's handwritten slip note as "*Caltha palstris* var. *pygmaea* Makino, April 1902, Tokyo cult." In MAK, there is one more specimen collected in May 1, 1902 (MAK 89212), and it is much more characteristic than the former two specimens, however, Makino didn't cite this specimen.

For these reasons we propose here one of the cited specimen bearing Makino's paper note to be a lectotype for this taxon.

Clematis japonica* Thunb. var. *briefipedicellata Makino in Bot. Mag. (Tokyo) **18**: 51 (1904).

Type: Nikko (Tochigi Pref.), June 9, 1901, T. Makino s.n. (MAK 95753—holotype).

Japanese name: Torigata-hanshôdzuru.

Makino (1904) published this taxon with the citation of a single specimen collected from Nikko, Tochigi Prefecture, eastern Japan, and it was discovered in MAK. This automatically becomes a holotype according to the International Code of the Botanical Nomenclature 9.1.1 (McNeill et al. 2006). This taxon is currently accepted as *Clematis tosaensis* Makino.

Clematis ×takedana Makino in Bot. Mag. (Tokyo) **21**: 87 (1907).

Lectotype (designated here): Nagano Pref.: on foot of Mt. Shirouma, Hosono, 27 Aug. 1905, Hisayoshi Takeda s.n. (MAK 95712)

[Fig. 3]

Japanese name: Murasaki-botandzuru.

Makino (1907) cited a single specimen collected 28 Aug. 1905 by H. Takeda. Only one specimen that was considered to be cited in his original protologue was discovered in MAK, however, its collection date was slightly different, and it was one day before the cited data, 27 Aug. 1905. It might be erroneous. The sheet is bearing the slip note on the upper right side written by Makino's handwriting as "Aug.

27, 1905, Foot of Mt. Shirouma, Hisayoshi Takeda" (Fig. 3). It is apparently his original material for describing this taxon. If the date of collection coincides with the cited data in the original protologue, it should be treated as the holotype, however, in the absence of any evidence to confirm this that it was mistake. Therefore this specimen was chosen as a lectotype here.

***Clematis tosaensis* Makino in Bot. Mag. (Tokyo) [6: 50 (1892), nomen tantum et] 11: 332, cum. diag. jap. (1897).**

Lectotype (designated here): Kochi, Mt. Torigata, 22 May 1889, T. Makino s.n. (MAK95766).

Syntype (not found): Shizuoka (Suruga), Mt. Fuzi, Jul. 1891, S. Matsuda.

Japanese name: Torigata-hanshô-dzuru (Makino 1892).

Makino (1892) just gave the new name with the citation of his own specimen collected in Mt. Torigata and Matsuda's specimens collected in Mt. Fuzi (Fuji) without the date of collection. Five years later, Makino (1897) simply gave the short diagnosis in Japanese in the Botanical Magazine Tokyo. This is considered to be his original publication for this taxon. Furthermore, at a later date he treated this taxon again in his paper (Makino 1904) to clarify its entity, and gave a full description in English with the citation of the same two specimens with the date of collection. On the other hand, Mt. Fuji specimen has not thus far been found. Although Mt. Torigata specimen is sterile, it is no doubt that it is apparently type material. Therefore Makino's Mt. Torigata specimen should be chosen as the lectotype.

Makino (1904) also cited two specimens collected by Z. Umemura (Mt. Asama, 7 May 1893, Umemura 8, MAK 95758; Ise, Ôishi-mura, 28 April 1895, Umemura 120, MAK 95758). They are likely to be referred by Makino when this taxon was published in 1897, because they were collected more than two years before the publication date. These

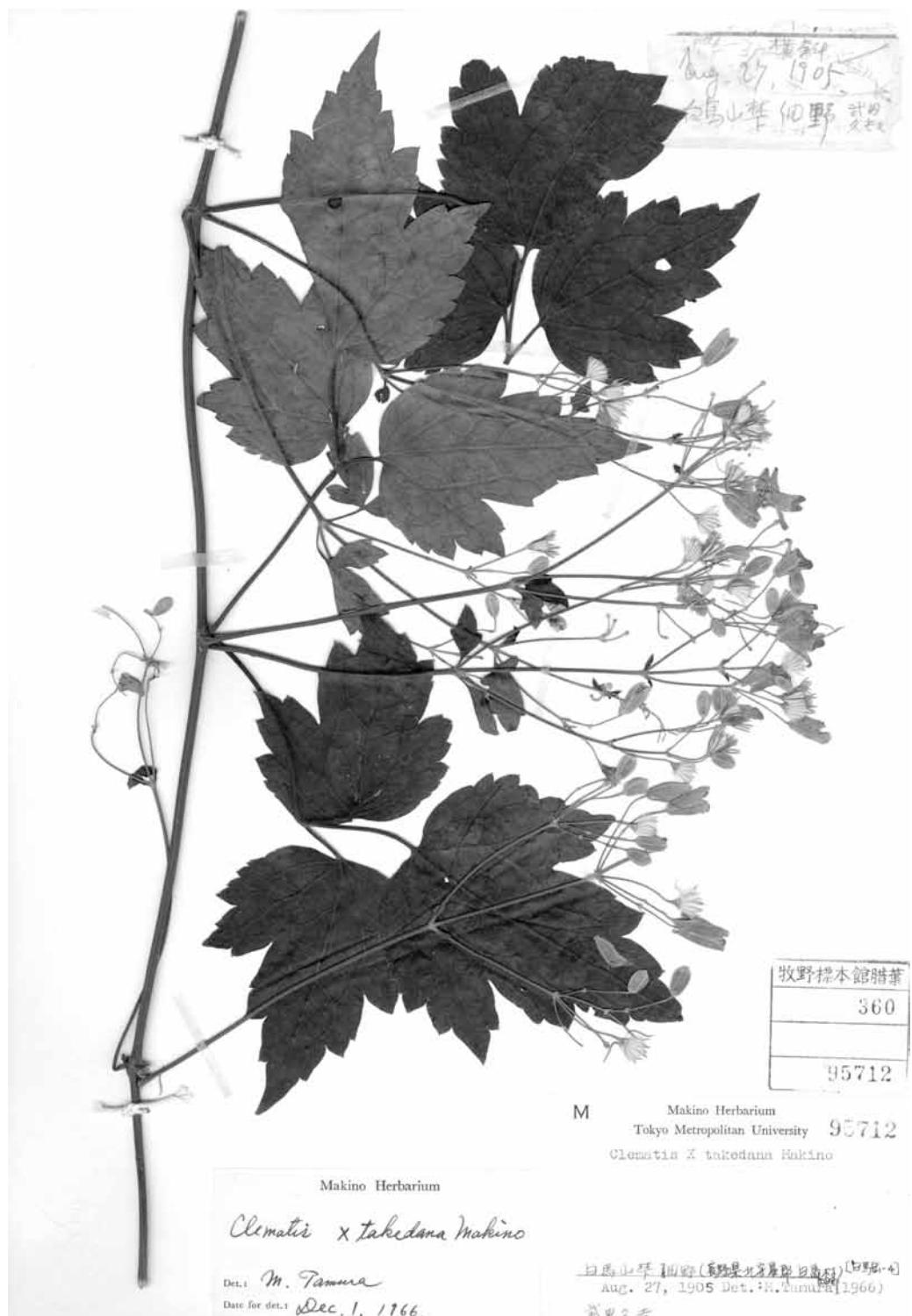


Fig. 3. Lectotype of *Clematis x takedana* Makino (H. Takeda s.n., MAK 95712), bearing a slip written by T. Makino on the upper right.

specimens also help with understanding of this taxon.

Coptis quinquefolia* Miq. f. *ramosa
Makino in Bot. Mag. (Tokyo) **25**: 227 (1911).

Lectotype (Yahara et al. 1987): Kagoshima Pref.: Yakushima; Sept. 1909, T. Makino s.n. (MAK 206738).

Japanese name: Ôgokayô-ôren.

Typification of this name was verified by Yahara et al. (1987). This taxon is endemic to Yakushima Island, and currently accepted as *Coptis ramosa* (Makino) Tamura. The lectotype can be seen on the Makino Herbarium website (Makino Herbarium 1999).

Coptis quinquefolia* Miq. var. *stolonifera
Makino in Bot. Mag. (Tokyo) **25**: 227 (1911).

Lectotype (designated here): Shinano (Nagano Pref.): Mt. Ariake, July 1903, M. Orii 7 (MAK 94871).

Syntype: Shinano (Nagano Pref.): Komagatake, 1 Aug. 1901, J. Nakae s.n. (MAK 95817).

Japanese name: Baika-ôren.

Makino (1911) cited two specimens in his original protologue of this taxon. One is

the specimen collected by J. Nakae in Komagatake (MAK 95817), and another was collected in Mt. Ariake (M. Orii 7, MAK 94871). Both specimens were collected in Nagano Prefecture. A paper slip is attached on the sheet of the latter specimen as "Type" in Makino's own handwriting. We selected this Orii specimen as the lectotype. This taxon is currently accepted as *C. quinquefolia* Miq. var. *quinquefolia*.

Coptis quinquefolia* Miq. var. [β] *trifoliolata Makino in Bot. Mag. (Tokyo) **24**: 138 (1910).

Lectotype (designated here): Prov. Echigo (Niigata Pref.): Mt. Komagatake, 7 Aug. 1903, B. Hayata s.n. (TI).

Syntype : Prov. Etchû (Toyama Pref.): Mt. Tateyama, 24 July 1884, R. Yatabe and J. Matsumura s.n. (TI).

Japanese name: Mitsubano-baika-ôren

(Makino 1910).

Makino (1910) cited two specimens in his original protologue. Two of them are housed in TI. Makino noted on the sheet of Hayata's specimen with the transcription "*Coptis quinquefolia* Miq. var. *trifoliolata* Makino, var. nov." He also proposed the Japanese name as "Mitsubano-baika-ôren" on the label, and indicates as a new name (Makino 1910). This sheet is also sealed as "Type". In addition to these reasons, Hayata's specimen is much more characteristic and then the Komagatake specimen collected by Hayata is chosen as the lectotype here. This taxon is currently accepted as *Coptis trifoliolata* (Makino) Makino.

***Isopyrum numajirianum* Makino** in J. Jap. Bot. **7**: 11 (1931).

Lectotype (designated here): Prov. Kii, Kôya, 1930, Y. Numajiri s.n. (MAK 369658).

Japanese name: Kôya-shirokane-sô.

Makino (1931) cited two specimens collected in Kôya by Numajiri and himself in his original protologue. These two specimens were discovered at MAK. A paper slip is attached on the Numajiri specimen as "Kii, Kôya-san, 1930, Y. Numajiri, *Isopyrum numajirianum* Makino". This specimen is chosen as the lectotype here. This taxon is currently accepted as *Dichocarpum numajirianum* (Makino) W. T. Wang & P. K. Hsiao.

Pulsatilla cernua* (Thunb.) Bercht & C. Presl var. *plena Makino in J. Jap. Bot. **7**: 13 (1931).

Type: Prov. Ômi (Shiga Pref.): Mt. Ibuki, 6 May 1929, S. Tanaka s.n. (MAK 015333—holotype).

Japanese name: Fukidzume-okinagusa (Makino 1931).

Makino (1931) cited only one specimen in his original description, and the specimen was found at MAK. Therefore this specimen is automatically attributed to be the holotype. This taxon is the form having many petaloid stamens

and pistils, and currently accepted as *P. cernua* (Thunb.) Bercht & C. Presl f. *plena* (Makino) Okuyama. The holotype can be seen on the Makino Herbarium website (Makino Herbarium 1999).

Ranunculus kadzusensis Makino in J. Jap. Bot. **6**: 8 (1929).

Neotype (designated here): Shimoosa (Tochigi Pref.): June 1931, T. Makino s.n. (MAK 290124). [Fig. 4]

Japanese name: Hime-baika-mo (Makino 1929).

Makino (1929) cited a single specimen collected in Prov. Kadzusa by himself in his original protologue. At that time he simply gave a short diagnosis. He provided the full description at a later date in the same journal (Makino 1931), and then he additionally cited one more specimen collected in Shimoosa by himself. The Kadzusa specimen collected by Makino is housed at MAK, however, it was collected in 1935. Since its date of collection is later than the publication date, it is apparently different from the original cited specimen. On the other hand, only one specimen collected in Shimoosa by Makino was also discovered at MAK, and its collection year was done in 1931. This specimen is likely the one that Makino cites in his latter publication (Makino 1931), however, there is no evidence that it is really the cited specimen, because he did not cite the collection date in his original protologue.

The Kadzusa specimen has been annotated by M. Ono as “Lectotype of *Ranunculus kazusensis* Makino in The Jour. Jap. Bot. Vol. VI. No. 1, p 8”, though it has never been published as such. However, Makino cited only one specimen collected in Kadzusa in his original publication, and this is not his original material for this taxon. For these reasons the Shimoosa specimen should be proposed as a neotype (Fig. 4).

Ranunculus kawakamii Makino in Bot. Mag. (Tokyo) **18**: 48 (1904).

Lectotype (designated here): Prov. Iwaki (Aomori Pref.): Niida, June 21, 1901, Okuda s.n. (TI).

Syntype (not found): Ugo (Akita Pref.): Fukura, 1897, Kawakami s.n.; Mt. Chokai, 1897, Kawakami s.n.; Prov. Rikuzen (Iwate Pref.): Takata-machi, Kesen-gōri, 15 Sept. 1903, Toba s.n.; Prov. Kadzusa (Chiba Pref.): 28 July 1902, Wakana s.n.

Japanese name: Hime-kinpōge.

Makino (1904) cited four specimens in his original publication. Of these the Niida specimen collected by Okuda was discovered at MAK. No other cited specimens have been discovered at either of MAK or TI, the herbaria likely to hold Makino's type collections. The Niida specimen is chosen as the lectotype here. This taxon is currently accepted as *Halerpestes kawakamii* (Makino) Tamura.

Trollius pulcher Makino in Bot. Mag. (Tokyo) **28**: 109 (1914).

Type: Hokkaido: Kitami, Isl. Rishiri, Aug. 1903, T. Makino s.n. (MAK 196870—holotype, isotype). [Fig. 5]

Japanese name: Botan-kinbai.

Makino (1914) cited a single specimen collected from Rishiri, Hokkaido in his original protologue. This cited specimen is housed in MAK and automatically becomes a holotype based on the International Code of the Botanical Nomenclature 9.1 (McNeill et al. 2006). Kadota (1991) cited this specimen as holotype, however, he noted it was kept in TI. Furthermore Yonekura and Kajita (2003—) also cited TI as the herbarium housing this Rishiri specimen. It is likely to be mistakes and its holotype specimen is deposited in MAK (Fig. 5).

We are grateful to the curators of MAK and TI for permission to study their collections. We would like to thank Dr. Hidetoshi Nagamasu and Prof. Dr. Tetsuo Koyama for their useful comments.

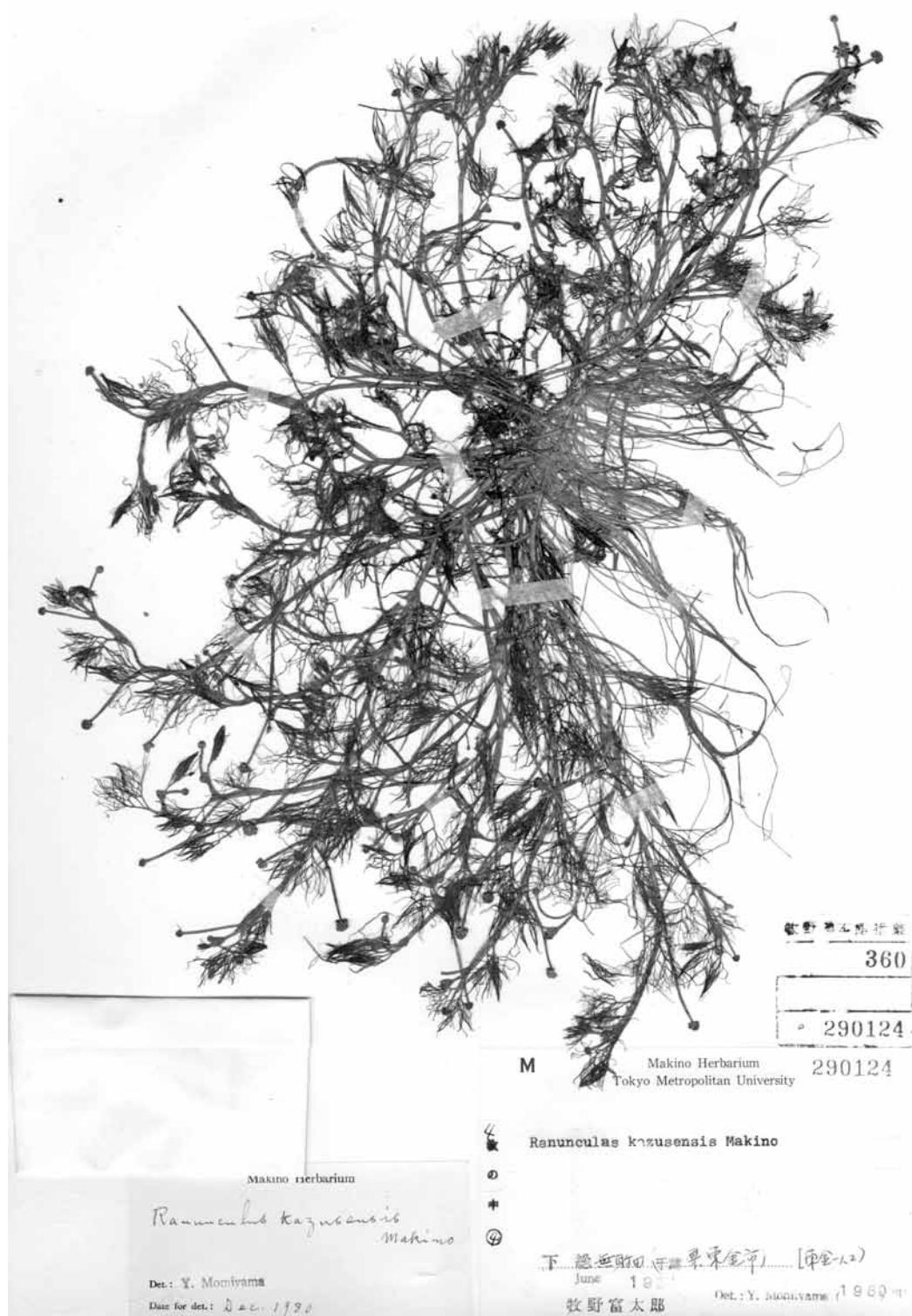


Fig. 4. Neotype of *Ranunculus kadzusensis* Makino (T. Makino s.n., MAK 290124).



Fig. 5. Holotype of *Trollius pulcher* Makino (T. Makino s.n, MAK 196870).

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牧野富太郎博士は日本の植物分類学の基礎を築いた一人として知られ、多くの日本産植物の学名を発表した。しかし、発表学名に対するタイプ標本の把握、検討、特に潜在するタイプ関連標本の調査、レクトタイプの選定などはあまり行われていない。この一連の研究は牧野富太郎博士が発表した日本産植物の学名について、タイプ標本およびその関連資料を調査し、必要があればレクトタイプ、ネオタイプの選定を行い、分類群ごとにそれらを整理しようとするものである。本稿ではキンポウゲ科 *Adonis amurensis* var. *uniflorus*, *Anemone flaccida* var. *semiplena*, *A. narcissiflora* var. *shikokiana*, *Aquilegia buergeriana*

f. *flavescens*, *A. flabellata* var. *humiliata*, *Caltha palustris* var. *pygmaea*, *Clematis japonica* var. *brevipedicellata*, *C. ×takedana*, *C. tosaensis*, *Coptis quinquefolia* f. *ramosa*, *C. quinquefolia* var. *stolonifera*, *C. quinquefolia* var. *trifoliolata*, *Isopyrum numajirianum*, *Pulsatilla cernua* var. *plena*, *Ranunculus kadzusensis*, *R. kawakamii*, *Trollius pulcher* の 17 分類群について MAK, TI に潜在する多数のタイプ関連標本を調査し、レクトタイプの選定、ネオタイプの選定を含めて整理・検討を行った。

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